

Notice of Allowability

Application No.

10/655,997

Examiner

Pamela E. Perkins

Applicant(s)

DALEY, JON P.

Art Unit

2822

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 16 march 2006.
2. ☒ The allowed claim(s) is/are 1-4 and 7-77.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 12/1/05, 3/16/06, 5/26/06
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

DETAILED ACTION

This office action is in response to the filing of the amendment on 16 March 2006. Claims 1-4 and 7-77 are pending.

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with David Latwesen on 15 June 2006.

The application has been amended as follows:

Please amend claims 14, 15, 17, 47, 48, 50, 67, 68 and 70 as follows:

14. The method of claim 1 wherein the basic treating fluid comprises potassium hydroxide in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

15. The method of claim 1 wherein the basic treating fluid comprises sodium hydroxide in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

17. The method of claim 1 wherein the basic treating fluid comprises an alkyl amine in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

Art Unit: 2822

47. The method of claim 1 wherein the basic treating fluid comprises potassium hydroxide in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

48. The method of claim 1 wherein the basic treating fluid comprises sodium hydroxide in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

50. The method of claim 1 wherein the basic treating fluid comprises an alkyl amine in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

67. The method of claim 1 wherein the basic treating fluid comprises potassium hydroxide in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

68. The method of claim 1 wherein the basic treating fluid comprises sodium hydroxide in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

70. The method of claim 1 wherein the basic treating fluid comprises an alkyl amine in addition to the at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

Allowable Subject Matter

Claims 1-4 and 7-77 are allowed.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: referring independent claims 1, 30 and 53, prior art does not anticipate, teach, or suggest providing a semiconductor substrate having an outer surface and treating the outer surface with a basic fluid comprising at least one of tetramethyl ammonium hydroxide and ammonium fluoride.

Referring independent claims 18, 51 and 71, prior art does not anticipate, teach, or suggest performing the basic treating fluid is at room ambient temperature and room ambient pressure.

For example, Buxbaum et al. (6,582,861) disclose a method of forming a patterned photoresist layer over a semiconductor substrate where a semiconductor substrate (102) having an outer surface (106); the outer surface (106) comprising a silicon nitride-containing material; applying photoresist (108) onto the outer surface (106) (col. 4, lines 1-16); and patterning and developing the photoresist (108) to form a patterned photoresist layer having laterally outer surface projecting feet proximate the semiconductor substrate (102) (col. 4, lines 25-28; col. 7, lines 32-35).

However, Buxbaum et al. do not disclose, anticipate, teach or suggest treating the outer surface with a basic fluid, wherein performing the basic treating fluid is at room ambient temperature and room ambient pressure.

Nagata et al. (6,956,980) disclose a method of forming a patterned photoresist layer over a semiconductor substrate where a silicon oxide layer is deposited over the semiconductor substrate, the silicon oxide layer having an outer surface; and applying a

photoresist onto the outer surface. Nagata et al. further disclose treating the outer surface with amine, a basic fluid.

However, Nagata et al. do not disclose, anticipate, teach or suggest the basic fluid comprising at least one of tetramethyl ammonium hydroxide and ammonium fluoride, wherein performing the basic treating fluid is at room ambient temperature and room ambient pressure.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

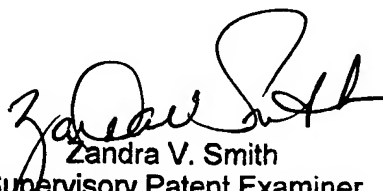
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pamela E. Perkins whose telephone number is (571) 272-1840. The examiner can normally be reached on Monday thru Friday, 8:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zandra Smith can be reached on (571) 272-2429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PEP
5 June 2006


Zandra V. Smith
Supervisory Patent Examiner
22 June 2006